REMARKS

This amendment, submitted in response to the Office Action dated November 13, 2002 is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 2, 3 and 5-11 are the claims pending in the application. Claims 7 and 11 have been deemed to contain allowable subject matter. Claims 9 and 10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al (USP 5,420,441). Claims 2, 3, 5, 6, and 8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Newman in view of Farrokhnia et al (USP 6,231,231).

Applicant submits the following arguments in traversal of the Section 103(a) rejections over Newman.

With respect to claim 9, the Examiner argues that Newman discloses in column 2, lines 52-55 a storable fluorescent inspection sheet and that the contrast difference between one or more low and high density regions on said sheet is at least 1:20 is described in column 6, lines 54-66 and column 8, lines 39-40.

The Examiner concedes that Newman does not describe that the contrast difference is at least 1:50, but maintains it would be obvious to provide a contrast difference of at least 1:10,000 in Newman in order to provide analysis of the exposure latitude and photometric response linearity over the 10,000:1 dynamic range of the storage phosphor. The Examiner is now referring to the storage phosphor sheet for disclosing contrast difference whereas the Examiner had earlier referred to the test target for disclosing contrast difference. See Office Action at p. 3. The Examiner must determine whether the storage phosphor or the test target of Newman

describes the storable fluorescent sheet as described in claim 9. The Examiner cannot refer to the test target for disclosing the contrast difference is 1:20 and then refer to the storage sheet for disclosing that the contrast difference is at least 1:50. The Examiner must select one or the other for disclosing contrast difference.

Also, analysis of the exposure latitude and photometric response linearity has nothing to do with the contrast of low and high density areas. Column 1, lines 49-53 of Newman merely indicates that a general storable phosphor sheet (not a storable fluorescent inspection sheet) may be used to analyze an image of the maximum contrast of 10,000:1. Newman is silent about the usefulness of a general storable phosphor sheet in inspecting the influence of stray light.

As a final matter, when there is no masking, a linear signal value of 1584.9 results, but with the maximum thickness masking of .3mm, a linear signal value of 50.1 results. Therefore, the relative intensities described at column 8 does not meet the contrast difference described in the claims. At best, the contrast is approximately 1:30 between the no masking case and the full masking case. This is less than the level of claim 9, therefore, claim 9 is patentable.

Since the Examiner's argument for claim 10 relies upon the same arguments as discussed in claim 9, it is patentable for the same reasons set forth above.

Applicant submits the following arguments in traversal of the Section 103(a) rejections over Newman in view of Farrokhnia.

As an initial matter, Applicant submits that Newman and Farrokhnia may not be combined against the present claims. The present invention relates to reduction of stray light effects in reading a storable phosphor. By contrast, Farrokhnia relates to a calibration of an x-ray pattern on an x-ray detector. The effects of stray light cannot be easily ascertained by the

multiple coupons and sub-phantoms for x-ray detection in Farrokhnia. Therefore, Farrokhnia does not disclose the boundary line inclined so that it intersects both edges of the radiation inspection image that extend in the vertical scanning direction.

The Examiner concedes that Newman lacks the boundary line of claims 2 and 3 and cites Farrokhnia to cure this deficiency. The Examiner cites column 7, lines 44-58 for disclosing a straight boundary line between low density and high density regions inclined with respect to a horizontal scanning direction. The cited column and lines merely talk about resolution comparison by comparing the edges 1410 of the coupon 375 with the transitions of the x-ray system. However, claim 2 describes a straight line inclined relative to a scanning direction that intersects two edges of an inspection image. The partial coupon 375 does not meet this aspect of the invention in that the region 375 does not traverse two edges. Applicant submits that Farrokhnia appears to teach away from this aspect of intersection of two edges of an inspection image. This is because Farrokhnia relies on several modular components for providing multiple sub-phantoms. See column 1, lines 5-10. An edge to edge boundary between regions would reduce the number of calibrating phantoms or areas for determining the number of calibrating phantoms or areas for determining an MTF value. Column 7, lines 30-35.

Regarding claim 8, the Examiner cites Newman for disclosing a radiation transmittable member is disposed at a position corresponding to said density pattern on a storable phosphor sheet. The Examiner now distinguishes the test target 104 from storage phosphor 106 and cites test target 104 for disclosing a radiation transmittable member and cites storage phosphor 106 for disclosing a storable fluorescent sheet. With respect to claim 9, the Examiner had argued that the test target was a storable fluorescent sheet having one or more low density and high density

regions having a contrast difference of at least 1:20. Now, the Examiner is arguing that the test target is something separate from the storage phosphor sheet. Applicant respectfully requests that the Examiner cite to another element of the reference or cite another reference for disclosing such elements. The Examiner cannot cite test target 104 as both a radiation transmittable member and a storage phosphor sheet. Moreover, it is not inherent that the storage phosphor would include the contrast difference as claimed.

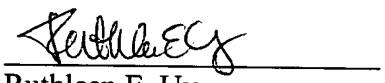
In addition, even if the target sheet acted as a radiation transmittable member, it is not in a position corresponding to a density pattern on the phosphor sheet because as stated earlier, the density patterns are on the target sheet, not the storage sheet. Also, even if the density patterns were on the storage sheet, the target sheet covers the entire storage sheet and does not appear to correspond to any pattern. Therefore, claim 8 is patentable.

Applicant has added claims 12-15 to describe the invention more particularly.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

Page 19, lines 10-25 to page 20, lines 1-15.

Fig. 13 illustrates how an inspection of stray light is carried out by use of the storable fluorescent inspection sheet 21 shown in Fig. [12] 9. Assume that in the radiation image reader 1, stray light develops at the position P6 shown in Fig. 11 during reading at the position P5. As illustrated in Fig. 13, a low-density region 27A and a high-density region 27B develop in an image 27, obtained by reading the storable fluorescent inspection sheet 21. In the case where the positions P5 and P6 on a certain horizontal scanning line are both in the low-density region 24A of the radiation inspection image 24, noise resulting from stray light is inconspicuous. However, in the case where the horizontal scanning line is moved by vertical scanning during reading of the storable fluorescent inspection sheet 21, and the position P5 is in the low-density region 24A and the position P6 in the high-density region 24B, noise 23 in the form of a line extending in the vertical scanning direction will develop at the position in the image 27 that corresponds to the position P5 in the low-density region 27A. Therefore, using the storable fluorescent inspection sheet 21 having stored and recorded the radiation inspection image 24 that has the density pattern shown in Fig. 12, stray light can be inspected with reliability. In the image 27 obtained from a storable fluorescent inspection sheet 21 such as this, if the intersection between the horizontal scanning line, passing through point P5' where the noise 23 develops, and the boundary line 27C (between the low-density region 27A and the high-density region 27B) is taken to be P6', the

intersection P6' represents the position at which stray light develops. Therefore, the position at which stray light develops can also be found by use of the storable fluorescent inspection sheet 21 having stored and recorded the radiation inspection image 24 shown in Fig. 12.

Page 20, lines 16-26 to page 21, lines 1-13.

On the other hand, in the case where stray light develops at position P7 during reading at position P8 shown in Fig. 14 even when using the storable fluorescent inspection sheet 21 having [storing] stored and recorded the radiation inspection image 24, stray light cannot be inspected, because, in the radiation inspection image 24 shown in Fig. 12, noise in the form of a line is inconspicuous in an obtained image even when the position P7 is in the low-density region 24A and the position P8 in the high-density region 24B, as well as when the positions P7 and P8 are both in the low-density region 24A or high-density region 24B. It is therefore preferable to employ a storable fluorescent inspection sheet 21 having stored and recorded a radiation inspection image 28 such as shown in Fig. 15. The radiation inspection image 28 has one low-density region 28A and two high-density regions 28B and also has a density pattern such that the low-density region 28A is interposed between the two high-density regions 28B, each boundary line 28C between the regions 28A and 28B is inclined with respect to the horizontal scanning line, and each boundary line 28C intersects the edges 51 and 52, extending in the vertical scanning direction, of the radiation inspection image 28. A description will hereinafter be given of how stray light is inspected by use of the storable fluorescent inspection sheet 21 having stored and recorded the radiation inspection image 28.

IN THE CLAIMS:

Claims 12-15 are added as new claims.